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Supplementary Material

Subtropical-temperate forested wetlands of coastal south-eastern Australia – an analysis of vegetation data to support ecosystem risk assessment at regional, national and global scales

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Supplementary Data

Appendix S1: *Changes in the circumscription of forested wetlands on fluvial sediments*

Our cluster analyses largely corroborated the classification of Keith and Scott (2005), however the addition of new data combined with a novel clustering technique presents new perspectives on the hierarchical relationships among vegetation types occurring on Quaternary Alluvium. We identified eight floristic clusters which collectively represent Keith and Scott's original five units. Our additional clusters describe variants of Coastal River-flat Eucalypt Forest (two units) and Lowland Rainforest (3 Units), reflecting a greater range in composition in these types of forested wetland than other communities occurring on Quaternary alluvium. This result is consistent with their distribution over a greater climatic and edaphic range, from the coastal plains to the alluvial valleys of the hinterland. Since they share similar compositional and structure properties, we describe these variants informally as sub-classes, thus retaining five forest wetland classes as originally described by Keith and Scott (2005).

Although we identified three sub-classes of Lowland Rainforest on Floodplains and two classes of River-flat Eucalypt Forest, the major adjustments to Keith and Scott's (2005) classification proposed here relate to resolving details in the descriptions of the units, rather than major revisions to the circumscriptions of the units. That is, we have adopted a pragmatic approach, retaining the units of Keith and Scott's (2005) classification because they are widely known and support established conservation applications, while offering additional insights into compositional variation within those units at a broad scale. Our results show that four of Keith and Scott's forested wetland types extend to south-eastern Queensland where they are represented by 15 Regional Ecosystem (RE) types (Table S3.2). Conversely, there is relatively weak quantitative, but stronger qualitative evidence for the presence of only a single major forested wetland type in Victoria - River-Flat Eucalypt Forest

on Coastal Floodplains – which occurs on the East Gippsland Lowlands and Gippsland Plains regions of Victoria where it is represented by four Ecological Vegetation Classes (EVCs) (Table S3.3).

On barrier and estuarine Quaternary deposits, our classification distinguishes fewer freshwater wetland and sclerophyll vegetation types than Keith and Scott's classification and differs from Keith's (2004) vegetation classes primarily in the number of forested wetland types which are aggregated in a single class in that state-wide classification (Table 1, main document). Across all three landscapes (floodplains, estuaries and sandplains) around half of the 20 units in our revised classification approximate one-to-one relationships with state-wide classes of Keith (2004). The strength of these relationships is not necessarily reliably indicated by the proportional overlap in characteristic species because Keith's species inventories were derived via qualitative rather than quantitative methods (Table 1, main document). The alignment is strongest among classes of saline wetlands (C20, C2, C11) and freshwater wetlands (C19, C10, C9, \pm C1) and weakest among classes of dry sclerophyll forests and heaths where there are substantial overlaps in characteristic species among state-wide classes.

Coastal River-flat Eucalypt Forest is represented in our classification by two units distributed primarily either on the coastal plain (C15) or the alluvial valleys of the coastal hinterland (C18), (Figure 2, main document). The forests of the coastal plain occur at lower elevations (median elevation 11 m ASL) and, as a consequence, experience more frequent and prolonged periods of inundation from flood events than those of the alluvial valleys (median elevation 60 m ASL). The coastal plain is also strongly climatically-regulated by maritime air-flows and therefore generally experiences a higher average rainfall and a lower diurnal

temperature ranges than the alluvial valleys where frosts and heat-wave conditions are more common and local rain shadows exist. Differences in drainage and climate are strongly reflected in differences in composition. Coastal River-flat Eucalypt Forests of the coastal plain are characterised by a range of species which are rarely, recorded in forest of the alluvial valleys. These include *Acacia longifolia*, *Breynia oblongifolia*, *Callistemon salignus*, *Dianella caerulea*, *Entolasia stricta*, *Eucalyptus robusta*, *Eustrephus latifolius*, *Gahnia clarkei*, *Geitonoplesium cymosum*, *Glochidion ferdinandii*, *Gynochthonium jasminoides*, *Hibbertia scandens*, *Imperata cylindrica*, *Melaleuca linariifolia*, *Parsonsia straminea* and *Pteridium esculentum* (Appendix 1). Fewer species are restricted to alluvial valleys, and many of these are common to the grassy woodlands of the coastal rain shadow valleys which occur on lithic soils adjoining the floodplains (Keith 2004). Such species include *Bursaria spinosa*, *Cheilanthes sieberi* subsp. *sieberi*, *Clematis glycinoides*, *Commelina cyanea*, *Glycine tabacina*. and *Echinopogon ovatus*. *Eucalyptus tereticornis*, a species ubiquitous throughout Coastal River-flat Eucalypt forests is also more frequently recorded in alluvial valleys than on the coastal plain.

Samples of Coastal River-flat Eucalypt Forest in the analysis of Keith and Scott (2005) more strongly represented alluvial valleys than coastal plains. As a consequence, the community as originally described was generally considered to occur on the central and upper parts of the floodplain and was known only from the central and southern floodplains of NSW south from Newcastle (Keith and Scott 2005). In our revised circumscription, Coastal River-flat Eucalypt Forests are distributed on coastal plains along the NSW coast between Moruya and the Grafton district, although north from Newcastle they intergrade extensively with subtropical coastal floodplain forests which tend to occupy the more elevated and fertile locations (Figure 3, main document). Coastal River-flat Eucalypt Forests occur in alluvial valleys from

the Gippsland Plain and East Gippsland lowlands in Victoria north to the Grafton district in northern NSW, although north from Newcastle the community is increasingly restricted to small areas of alluvium remote from the coast in the upper reaches of the catchments. A larger number of regional variants have been documented for Coastal River-flat Eucalypt Forest than any other coastal forested wetland, including 29 NSW PCTs (16 on the coastal plain, 13 in alluvial valleys) and four Victorian EVCs (Appendix S3).

Our circumscription of Subtropical Coastal Floodplain Forest largely aligns with that of Keith and Scott (2005), although our analysis supports an extension of its known range as far north as Gladstone, Queensland and some vegetation in the southern parts of the distribution that we attribute to Coastal River-flat Eucalypt Forests may have been considered Subtropical Coastal Floodplain Forest by Keith and Scott (2005). The distribution of samples in NSW is uneven, with strong concentrations between Newcastle and Taree and between Coffs Harbour and Casino but relatively few between Taree and Coffs Harbour or from Lismore north. This pattern reflects the fact Subtropical Coastal Floodplain Forests are now largely restricted to peripheral parts of the largest floodplains which may be more marginal for agricultural production and thus less representative of much of the original distribution. In addition, Subtropical Coastal Floodplain Forest is likely to be replaced by Floodplain subtropical rainforest on richer soils. Relatively few regional variants of Subtropical Coastal Floodplain Forest have been documented compared with other types of coastal forested wetlands, including six NSW PCTs and seven Queensland REs (Appendix S3).

Our circumscription of Swamp Oak Floodplain Forest also largely aligns with that of Keith and Scott (2005). The southern-most samples in our dataset reliably attributed to this community are located at Tathra on the far south coast of NSW Wales, while our analysis of

Queensland plot data suggests the northern limit of the community occurs near Hervey Bay. Relatively few samples were identified in the Queensland data, suggesting the community may not be extensively distributed north of the NSW border, although further investigations are required to confirm this. Ten regional variants of Swamp Oak Floodplain Forest recognised as PCTs occur as NSW, along with a single variant in Queensland (Appendix S3). In Victoria, Swamp Scrub (EVC 53) appears to be functionally similar to Swamp Oak Floodplain Forest and is characterised by several of the key dominant species. We suggest that examples of this EVC located in the far north-east corner of the state may fall within the circumscription of Swamp Oak Floodplain Forest or even Swamp Sclerophyll Forest in areas with less saline influence.

Although we identified a clear conceptual analogue of the floodplain variant of Swamp Sclerophyll Forest (C7) among our units, it was more difficult to identify Keith and Scott's sandplain variants (units 9, 10 and 11) because few of the original samples met the criteria for inclusion in our analysis, limiting our capacity to identify analogous units among our classes. We identified three units (C6, C9 and C10) with structural and compositional features comparable to the original sandplain variants, although none appeared one-to-one matches. Based on inter-centroid similarity, Unit C9 is compositionally closest to C7 but occurs exclusively on marine sediments and, on balance, bears a closer compositional resemblance to Keith and Scott's units 29, 30, 31 and 32 (swamp forests, and heath in dune swales). Unit C10 encompasses the compositional range of Keith and Scott's units 9, 10 and 11 (and, in addition, units 34 and 34), is compositionally distinct from C7 and also occurs primarily on marine sediments. Unit C6 is similar to C7 in structure and dominant species but occurs on more well-drained soils and the pair are relatively weakly related in overall floristics, though they may intergrade in damp sites. Since samples of C7 are distributed

relatively evenly across alluvial, estuarine and barrier systems (Table 3, main document), our results corroborate anecdotal reports that Swamp Sclerophyll Forest on Coastal Floodplains (the assemblage of species listed under the NSW BC Act) is not restricted exclusively to fluvial sediments (Smith 2009). However, our results reinforce the notion of distinct floodplain (C7) and sandplain (C10) swamp sclerophyll types and we conclude that it is likely that the floodplain variant (C7) was distributed most extensively on alluvium prior to European colonisation and examples occurring on estuarine and coastal barrier depositional systems only ever made up a small proportion of its distribution. Our circumscription of Swamp Sclerophyll Forest on Coastal floodplains thus approximates that of Keith and Scott (2005), although with the benefit of additional data we describe a slightly broader ecological distribution than was previously understood. Samples representing Swamp Sclerophyll Forest on Coastal Floodplains are distributed along the east coast from around Jervis Bay in NSW to Hervey Bay in Queensland and represent ten NSW PCTs and five Queensland REs (Appendix S3).

We identified three units corresponding to rainforest occurring on coastal Quaternary sediments (C8, C12, C13) (Table 3, Figure 2, main document). One of these (C12) was recorded almost exclusively on alluvium, has a very high proportion of diagnostic species overlapping with Keith's (2004) Sub-tropical rainforest class and Keith and Scott's (2005) Lowland Rainforest on Floodplains. Species diagnostic of C8 represent a range of rainforest classes including warm temperate subtropical and littoral. Samples of Unit 8 were recorded on both alluvium and barrier deposits near the coast suggesting the cluster samples a transition from lower floodplain tropical rainforests to rainforests of dunes and littoral zone. Unit C13 occurs primarily on fluvial sediments in low-lying parts of the near-coastal floodplain, although as with C7, a reasonable proportion of samples are located on estuarine

and marine sediments where these have been reworked with fluvial silts and clays and salinity is low. We conclude all three units correspond to Keith and Scott's Lowland Rainforest on Floodplains. Collectively, these rainforests represent a very broad range of regional variants, including 20 NSW PCTs and two Queensland REs (Appendix S3), although it is possible the NSW classification of rainforests is of a finer thematic scale than that of Queensland.

Relationships of communities on other Holocene sediments

In addition to assemblages representing forested wetlands, we identified three units (C20, C2 & C11) as saline wetlands (*sensu* Keith 2004) which corresponded closely to Mangrove Swamps and Saltmarshes as described by (Keith 2004) and Estuarine Fringe Forest as described by Keith and Scott (2005) respectively. Three units (C19, C10, C9) were identified as Freshwater Wetlands (*sensu* Keith 2004). One of these (C19) corresponded to Keith's Coastal Freshwater Lagoons as described above. The remaining four units comprised Dry Sclerophyll Forests (DSF) and Heaths (*sensu* Keith 2004). Species diagnostic of Unit C4 corresponded very closely with Keith's Wallum Sand Heath and, to a lesser extent, Coastal Dune DSF classes and, similarly, Keith and Scott's Dune Woodland and Dry Heath on Dunes (Table 1, main document). Conversely, unit C5 very closely matches Keith's Coastal Dune DSF and somewhat less so Wallum Sand Heath. We conclude these pairs are essentially analogues, although they may represent alternative ways to partition the continuum of heath and forest communities on dunes. Unit C1 corresponds very closely with Keith and Scott's (2005) north coast wet heath communities and has a relatively high representation of species characteristic of Keith's (2004) Coastal Heath Swamps class. Unit C1 is most closely related to unit C10 (Figure 2) and, as with dune forests and heaths, these units represent versions of Keith's Coastal Heath Swamps and Coastal Swamp Forest Classes (Table 1, main document).

Unit C3 corresponds to Keith's Maritime Grasslands Class and best represents Keith and Scott's Beach-strand Grassland unit.

Appendix S2 Descriptions of subtropical-temperate forested wetland assemblages of south-eastern Australia

1) Swamp Sclerophyll Forest on Coastal Floodplains

Description

Swamp Sclerophyll Forest on Coastal Floodplains is variable in structure, with trees ranging from less than 10 to more than 25 m in height and with sparse to very dense foliage cover. Small trees and shrubs may be present in the understorey. These are of variable height and usually occur at low to medium densities with generally sparse foliage cover. The non-woody ground layer is frequently dense and often up to 3 metres in height. Throughout most of its range, the community is characterised by the presence of *Eucalyptus robusta* and *Melaleuca quinquenervia*, one or both of which are most frequently the dominant tree species in all regional variants of the community, with the exception of slightly saline areas on the central coast of NSW. In that area, dominant plants include *Melaleuca ericifolia*. *Gahnia clarkii* and *Parsonsia straminea* are also characteristic of the community throughout its range, the former is the most frequent understorey dominant (with the exception of slightly saline areas). Other tree species recorded frequently in regional variants of Swamp Sclerophyll Forest on Coastal Floodplains include *Melaleuca biconvexa* (southern parts of the distribution), *Glochidion ferdinandi*, *G. sumatranum* (far northern parts of the distribution), *Syzygium smithii*, *Melaleuca linariifolia* and *Casuarina glauca* (slightly saline areas). These species may co-dominate in some places but typically contribute less than 5% foliage cover. Frequently recorded shrub/small tree species include *Acacia longifolia*, *Elaeocarpus reticulatus*,

Melicope elleryana and, less frequently, *Callistemon salignus*, *Pittosporum undulatum* and *Cupaniopsis anacardioides*. The ground layer is dense, essentially non-woody and comprises a mixture of ferns, sedges, grasses and forbs. The ferns *Pteridium esculentum*, *Telmatoblechnum indicum* and *Hypolepis muelleri* are most frequently present and may be locally abundant. Other frequently occurring ground cover species include *Entolasia marginata*, *Baloskion tetraphyllum*, *Dianella caerulea*, *Viola hederacea* (*sens lat.*) and *Imperata cylindrica*. *Carex appressa*, *Baumea juncea*, and *Centella asiatica* are frequently recorded in slightly saline areas. Vines are frequently present with the most frequently recorded species being *Parsonsia straminea*, *Gynochthodes jasminoides* and *Stephania japonica* var. *discolour*.

Habitat

Swamp Sclerophyll Forest on Coastal Floodplains occurs in very low-lying areas, almost always below 20 m above sea level, on soils of clayey sandy silt texture with fine sand particles. Samples of the community are distributed relatively evenly across alluvial, estuarine and barrier systems on a wide variety of the landforms described by Troedson and Hashimoto (2008) (Table 4, main document), however it is likely that the community was distributed most extensively on alluvium prior to European colonisation and examples occurring on estuarine and coastal barrier depositional systems only ever made up a small proportion of its distribution. On the alluvial plain, the community occurs most commonly on swamp landforms, including both those receiving fluvial inputs and those with no supply of clastic sediments. It is also frequently recorded on alluvial fans. In estuarine depositional systems, the community is most frequently recorded on inter-barrier creek deposits within, or along the margins of barrier systems where reworking of marine barrier sands has incorporated organic matter from local vegetation and fluvial sediments derived from

upstream fluxes. Swamp Sclerophyll Forest also occurs in estuarine swamps, although only in areas lacking saline ground water. The community is generally restricted to the landward portions of coastal barrier systems on back-barrier flats and swamps, but may also occur in other parts of coastal barrier systems in areas where marine sediments have been reworked and silts, clays and organic matter have been incorporated.

Geographic distribution and relationship to established classifications

Swamp Sclerophyll Forest on Coastal Floodplains is primarily distributed on floodplains between Sydney and Gladstone in south-east Queensland, although minor examples have been recorded as far south as Moruya on the mid-south coast of NSW. A number of regional and local variants of the community have been recognised (Appendices S3.1, 3.2) with species composition varying regionally in association with gradients of increasing temperature rainfall from south to north and locally in association with hydrological, edaphic and salinity gradients. Southern variants include Central Coast Flats Mesic Swamp Forest (PCT 3983) and Hunter Coast Sandplain Sedge Paperbark Wetland (PCT 3997) which have been recorded between Sydney and Newcastle and occupy opposite ends of local drainage gradients. Variants restricted to the north coast of NSW include Far North Paperbark Fern Swamp Forest (PCT 3989) and Far North Paperbark Fern Swamp Forest (PCT 3990) which intergrade in low lying areas in association with minor topographic or drainage gradients. Northern Estuarine Paperbark Sedge Forest (PCT 4000) (Sydney to Tweed Heads), Northern Floodplain Paperbark Fern Swamp Forest PCT (4001) (Kempsey to Ballina) and Coastal Floodplain Swamp Paperbark Scrub (PCT 3985) (Taree to Moruya) have slightly broader distributions and occur in poorly drained areas with slightly higher salinity. Northern *Melaleuca quinquenervia* Swamp Forest (PCT 4004), Northern Paperbark-Swamp Mahogany

Saw-sedge Forest (PCT 4006) and Coastal Sands Swamp Mahogany Rush Forest (PCT 3986) are broadly distributed between Gosford and Tweed Heads in area free of saline influence and may occur up to several kilometres from the coast. Five of Queensland's regional ecosystems (12.3.4, 12.3.4a, 12.3.5, 12.3.5a 12.3.6 and 12.3.20) fall within the circumscription of the community (Appendix S3.2).

2) Swamp Oak Floodplain Forest

Description

Swamp Oak Floodplain Forest is variable in structure, with trees ranging from less than eight to more than 28 m in height and with sparse to dense foliage cover. Small trees and shrubs occasionally form a sub-stratum up to 12 m in height with highly variable foliage cover. Groundcover ranges from sparse to very dense, although most examples have a least moderate cover, generally up to one or two metres in height, although occasionally to four metres (NSW DPIE 2019). The community is characterised throughout its range by the presence of *Casuarina glauca* which is most frequently the dominant tree species in regional variants north from the Illawarra region, with *Melaleuca ericifolia* occurring progressively more frequently to the south and eventually replacing *C. glauca* as the dominant species south of Bermagui (Keith and Scott 2005). *Melaleuca quinquenervia* frequently occurs as a co-dominant species north from Sydney and *Melaleuca nodosa* may be co-dominant in examples from Central Coast to just north of the Hunter River. Other tree species recorded infrequently in regional variants of Swamp Oak Floodplain Forest include *Cryptocarya triplinervis* (Qld), *Glochidion ferdinandi*, *Cupaniopsis anacardioides*, *Excoecaria agallocha*, *Hibiscus tiliaceus* and *Callistemon salignus* (northern NSW), *Melaleuca styphelioides*, *Eucalyptus robusta* and *E. ovata*. Groundcover species characteristic of the community

throughout its range include *Phragmites australis*, *Juncus kraussii* and *Baumea juncea*. These co-dominate with a range of other species that vary regionally and at local scales, including *Ottochloa gracillima*, *Eriochloa procera*, *Fimbristylis ferruginea*, *Viola hederacea*, *Pseudoraphis spinescens*, *Gahnia clarkei* and *Selliera radicans*. *Azolla pinnata*, *Utricularia aurea* and *Eleocharis equisetina* may be locally abundant in wetter areas (NSW DPIE 2019). Vines and scramblers may be present, with *Parsonisa straminea* characteristic throughout the range (NSW DPIE 2019) and *Geitonoplesium cymosum*, *Stephania japonica* var. *discolour* occurring less frequently (Keith and Scott 2005).

Habitat

Swamp Oak Floodplain Forest occurs in very low-lying areas, almost always below 30 m above sea level, on alluvial and estuarine depositional environments. Variants subject to more frequent and prolonged inundation are most frequently recorded in alluvial backswamps on organic muds/peat and silty clay soils. The community also frequently occurs on fluvial sands or silt on the floodplain and, less frequently, active and paleo channels and levees. In estuarine environments, Swamp Oak Floodplain Forest has been most frequently recorded on tidal-delta flats and saline swamps on organic mud/peats or silty soils where the groundwater is not highly saline and there is no tidal inundation.

Geographic distribution and relationship to established classifications

Swamp Oak Floodplain Forest is generally restricted to the lower reaches of floodplains between Merimbula in south-eastern NSW and Bundaberg in south-east Queensland (NSW DPIE 2019; Queensland Government 2020) with major examples previously occurring on the floodplains of the Clarence, Macleay, Hastings, Manning, Hunter, Hawkesbury-Nepean, Shoalhaven and Moruya Rivers (Keith and Scott 2005). A number of regional and local

variants of the community have been recognised (Appendix S3) with species composition varying regionally in association with gradients of increasing temperature and rainfall from south to north, and locally in association with hydrological, edaphic and salinity gradients. The most widespread and typical variant corresponds to NSW PCT 4028 (Estuarine Swamp Oak Twig-rush Forest) which is distributed along the coast from Moruya in the south to Coffs Harbour in the north. Four northern variants are restricted to floodplains north of Grafton (PCTs 3987, 3993, 4016 and 4030). Queensland Regional Ecosystem 12.1.1 (Casuarina glauca woodland on margins of marine clay plains) constitutes the northern-most variant of the community. A fifth northern variant (PCT 4048, Northern Swamp Oak-Paperbark Forest) has a relatively restricted distribution centred on Coffs Harbour. Swamp Oak Floodplain Forest becomes less variable in composition further south, although distinct, and relatively restricted variants have been recognised centred in the Hunter (PCT 4038) and Jervis Bay (PCT 4040) regions. Two variants dominated by *Melaleuca ericifolia* (PCTs 4056 & 4050) occur on the south coast NSW, south from around Newcastle and Nowra, respectively. In Victoria, EVC 53 (Swamp Scrub) appears to be functionally similar to Swamp Oak Floodplain Forest and is characterised by several of the key dominant species. Marginal examples of this EVC occurring in the far north-east of the state may fall within the circumscription of Swamp Oak Floodplain Forest although further data are needed to confirm this.

3) Lowland Rainforest on Floodplains

Description

Lowland Rainforest on Floodplains is a tall to very tall closed mesic forest characterised by a dense and diverse mid-stratum and abundant vines. The height of the rainforest varies

considerably depending on the history of disturbance. Mature examples are typically around 30 m in height, although in some cases trees of up to 58 m have been recorded. Emergent Eucalypts may be indicative of succession following disturbance. In some cases, Eucalypts dominate the canopy above a shorter, very dense stratum of mesic species. Highly fragmented remnants with many exotic species are often considerably shorter. The cover and diversity of smaller shrubs and herbaceous species are variable depending on the amount of light penetrating the canopy. Dense swards of ferns or grasses have been recorded in some variants but cover and diversity is particularly low under dense palm thickets.

Lowland Rainforest on Floodplains has three broad compositional variants reflecting differences in soil texture, fertility, and water availability. The most fertile alluvial soils occur on floodplains receiving sediments derived from mafic substrates of the Tweed Caldera, Dorrigo Plateau, Mount Royal Range and the Illawarra lowlands. These soils have the highest concentrations of phosphorus and nitrogen of any floodplain soils, as well as the highest ratio of silt to sand particles (Table 4, main document) and support a wide variety of subtropical species. Tree and shrub species frequently recorded in Floodplain Subtropical Rainforest (C12) include *Aphananthe philippinensis*, *Cryptocarya obovata*, *Archontophoenix cunninghamiana*, *Ficus coronata*, *Mallotus discolor*, *Neolitsea dealbata*, *Streblus brunonianus* and *Tabernaemontana pandacaqui*, along with vines and scramblers such as *Calamus muelleri*, *Cissus antarctica*, *Gynochthodes jasminoides*, *Maclura cochinchinensis*, *Pothos longipes*, and ground cover species *Lomandra hystrix* and *Diplazium australe*.

Rainforests on less fertile soils are more widespread along the coast and have a greater representation of temperate rainforest species. Tree and shrub species frequently recorded in Floodplain Warm Temperate Rainforest (C8) include *Syzygium smithii*, *Archontophoenix cunninghamiana*, *Cryptocarya microneura*, *Eupomatia laurina*, *Ficus coronata*, *Glochidion*

ferdinandii, *Guioa semiglauca*, *Livistona australis*, *Pittosporum, revolutum*, *Synoum glandulosum* and *Wilkiea huegeliana*, along with a wide variety of vines and scramblers including *Cissus antarctica*, *C. hypoglauca*, *Eustrephus latifolius*, *Geitonoplesium cymosum*, *Gynochthodes jasminoides*, *Pandorea pandorana*, *Stephania japonica*, *Parsonsia straminea* and *Smilax australis*. Common herbaceous species include *Blechnum cartilagineum*, *Gymnostachys anceps* and *Oplismenus imbecillis*. Floodplain Swamp Rainforest (C13) occurs in very warm and humid areas where annual rainfall exceeds 1600 mm and is characterised by a mix of species indicative of impeded drainage and littoral influence. Frequently occurring trees and shrubs include *Syzygium smithii*, *Archontophoenix cunninghamiana*, *Cupaniopsis anacardioides*, *Glochidion ferdinandii*, *Livistona australis*, *Melaleuca quinquenervia* and *Melicope elleryana*. Floodplain Swamp Rainforest is characterised by a similar range of climbing species as Warm Temperate Rainforest with the addition of *Hibbertia scandens*. Frequently occurring groundcover species include *Commelina cyanea*, *Lomandra longifolia* and *Hypolepis muelleri*.

Habitat

Lowland Rainforest on Floodplains is most widely distributed on the lower floodplains below 30 m ASL. Floodplain Subtropical (C12) and Warm Temperate Rainforests have been recorded up to 420 m ASL occurring as galleries along major watercourses, while all recorded samples of Floodplain Swamp Forest are from below 40 m ASL. Floodplain Subtropical Rainforests (C12) occur almost exclusively on fluvial sediments on floodplain landforms (Table 4, main document). Floodplain Swamp Rainforest (C13) and, to a lesser extent, Warm Temperate Rainforest (C8) have also been predominantly recorded on fluvial sediments but have also been recorded on marine and estuarine deposits (Table 4, main document). These include inter-barrier creek deposits within or along the margins of barrier

systems where reworking of marine barrier sands has incorporated organic matter from local vegetation and fluvial sediments derived from upstream fluxes. The communities are generally restricted to the landward portions of coastal barrier systems on back-barrier flats and swamps but may also occur in other parts of coastal barrier systems in areas where marine sediments have been reworked and silts, clays and organic matter have been incorporated. Records on estuarine deposits are most frequently associated with tidal delta flats, presumably in areas lacking saline ground-water. Of the three variants, Floodplain Subtropical Rainforest (C12) occurs on soils of high fertility and richest in silt and Floodplain Swamp Forest, the least fertile soils with the highest sand content (Table 4, main document).

Geographic distribution and relationship to established classifications

Lowland Rainforest on Floodplains has been recorded between Tathra on the NSW south coast and Maryborough in south-east Queensland although it occurs less frequently south of Sydney and is poorly sampled in Queensland. The majority of records are associated with the floodplains of the Tweed, Richmond, Clarence, Bellinger, Macleay, Hastings, Manning and Williams Rivers, with scattered samples indicative of a previously more extensive distribution on the Hawkesbury and Shoalhaven Rivers (Keith and Scott 2005), the Illawarra lowlands and assorted other minor watercourses. Floodplain Swamp Rainforest is generally restricted to near coastal lowlands north from Macksville, although isolated examples may occur as far south as Jervis Bay in areas of impeded drainage. Floodplain Subtropical Rainforest is generally restricted to three disjunct locations to the north of Sydney on the lowlands east of the Mount Royal Range, the Dorrigo Plateau and the Tweed and Clarence Valleys, although isolated examples may occur on the Illawarra lowlands. Floodplain Warm Temperate Rainforest is the most widely distributed of the three variants with a largely uninterrupted distribution from Gosford north and isolated examples occurring between

Wollongong and Tathra. Variants of Lowland Rainforest on Floodplains occurring in Queensland include Gallery Rainforest (notophyll vine forest) on Alluvial Plains (RE 12.3.1) and Complex Microphyll Vine Forest on Alluvial Plains (12.3.21). Eighteen of NSW's Plant Community Types fall within the circumscription of Lowland Rainforest on Floodplains as described here (Table S3.1).

4) River-flat Eucalypt Forest on Coastal Floodplains

Description

River-flat Eucalypt Forest on Coastal Floodplains is typically a very tall open forest with trees exceeding 40 m in height, although regrowth forests or examples on drier or less fertile soils may be considerably shorter. The community is variable in structure depending on soil depth, moisture availability and drainage. In drier locations, the community forms an open grassy forest with sparse intermediate strata, although in such cases the absence of shrubs may also reflect a history of frequent burning or grazing. In more productive sites, the community exhibits a well-developed sub-stratum of small trees, generally *Melaleuca*, which tends to be variable in height and cover in productive, well-drained sites but becomes dense and even where drainage is impeded. A shrub stratum is often present but is usually sparse and may contain mesophyllous species. Vines and scramblers are often present but are more typical of examples occurring on the coastal plain.

River-flat Eucalypt Forest on Coastal Floodplains has two broad compositional variants occurring on the coastal plain and alluvial valleys of the mid to upper floodplain respectively. The composition of the tree stratum is variable throughout both variants and the only broad generalisation that can be made is that *Eucalyptus tereticornis* occurs more frequently in the alluvial valleys and *E. robusta* on the coastal plains. Other tree species dominating the

community in different parts of its range include *Angophora costata*, *A. floribunda*, *E. resinifera*, *E. globoidea*, *E. viminalis* and, South from Sydney, *Eucalyptus botryoides*, *E. elata* and *E. cypellocarpa*. Species commonly forming a sub-tree stratum or occasional dominants include *Casuarina glauca*, *Glochidion ferdinandii*, *Melaleuca linariifolia*, and *M. quinquenervia*. Compositional differences between the coastal plains and the alluvial valleys are more pronounced in the understorey. A range of species are recorded predominantly on the coastal plain, including *Acacia longifolia*, *Breynia oblongifolia*, *Callistemon salignus*, *Dianella caerulea*, *Entolasia stricta*, *Eustrephus latifolius*, *Gahnia clarkei*, *Geitonoplesium cymosum*, *Glochidion ferdinandii*, *Gynochthodes jasminoides*, *Hibbertia scandens*, *Imperata cylindrica*, *Melaleuca linariifolia*, *Parsonsia straminea* and *Pteridium esculentum*. Species generally restricted to alluvial valleys include *Bursaria spinosa*, *Cheilanthes sieberi* subsp. *sieberi*, *Clematis glycinoides*, *Commelina cyanea*, *Glycine tabacina*. Species which occur frequently in both forms include *Dichondra repens*, *Entolasia marginata*, *Glycine clandestina*, *Lobelia purpurascens*, *Lomandra longifolia* and *Microlaena stipoides*.

Habitat

River-flat Eucalypt Forest on Coastal Floodplains occurs over a wide range of elevations from sea level on the coastal plain to approximately 440 m above sea level (ASL) on the alluvial and colluvial fans below the headwaters in the upper catchments. The coastal plain variant is generally restricted to below 120 m ASL and occupies relatively low-lying areas (median elevation 11 m ASL), although slightly more elevated than areas in which Swamp Sclerophyll Forest and Swamp Oak Floodplain Forest are common (Table 4, main document). Beyond its median elevation, the coastal plain variant is progressively replaced by the alluvial valley variant. Both variants occur on a wide range of soil textures incorporating varying proportions of silt, clay, fluvial sands and gravels. The community

occurs almost exclusively on fluvial sediments on the central and upper floodplains. Samples of the community have also been predominantly recorded on fluvial sediments although a modest proportion occur on back-barrier flats where marine or estuarine deposits have been reworked with fluvial silts and clays.

Geographic distribution and relationship to established classifications

River-flat Eucalypt Forest on Coastal Floodplains comprise a wide range of regional variants distributed in a broad arc from the East Gippsland lowlands in Victoria, and along the NSW coast as far north as Grafton, with outliers in the Tweed Valley and possibly south-east Queensland. In Victoria, the community is represented by EVCs 83 (Swampy Riparian Woodland), 641 (Riparian Woodland), 56 (Floodplain Riparian Woodland) and 18 (Riparian Forest). Variants of River-flat Eucalypt Forest in NSW occurring south of Sydney include PCTs 3185 (Far South River-flat Wet Forest), 3188 (South Coast River-flat Peppermint Forest), 3272 (South Coast Lowland Creekflat Forest), 4009 (Shoalhaven Lowland Flats Wet Swamp Forest), 4019 (Coastal Alluvial Bangalay Forest), 3192 (South Coast River-flat Ribbon Gum Forest) and 4049 (South Coast Floodplain Grassy Swamp Forest). From Sydney north, the community is represented by PCTs 3258 (Sydney Basin Creekflat Blue Gum-Apple Forest), 3435 (Hunter Coast Lowland Flats Damp Forest), 4020 (Coastal Creekflat Layered Grass-Sedge Swamp Forest), 4021 (Coastal Creekline Dry Shrubby Swamp Forest), 4036 (Hunter Coast Lake Flats Apple Forest), 4039 (Hunter Range Creekflat Apple-Red Gum Forest), 4042 (Lower North River-flat Eucalypt-Paperbark Forest), 4047 (Northern Swamp Mahogany-Bottlebrush Swamp Forest) and 4057 (Sydney Creekflat Swamp Mahogany-Paperbark Forest).

5) Subtropical Coastal Floodplain Forest

Description

Subtropical Coastal Floodplain Forest is typically a very tall, open forest with trees exceeding 40 metres in height with a mid-stratum of shorter trees, a sparse to very sparse shrub stratum and a dense herbaceous ground cover with a strong representation of grasses. Canopy heights may be lower in sites that are less productive or recovering from past disturbance while foliage cover may be very dense in the most productive areas. The composition of the canopy is highly variable. *Eucalyptus tereticornis* and *Corymbia intermedia* are the most frequent and widespread tree species and have been recorded as dominant species in approximately 30% of sample locations. *Eucalyptus siderophloia* occurs slightly less frequently but may be dominant in some locations. *Eucalyptus bancroftii* and *E. moluccana* occur relatively infrequently but are the dominant species in some variants. A wide range of other canopy species have been recorded, the most frequent of which are *E. seeana*, *E. pilularis*, *E. resinifera*, *E. crebra*, *E. microcorys*, *E. fibrosa*, *E. propinqua* and *E. carnea*. *Lophostemon suaveolens* is almost always present in Subtropical Coastal Floodplain Forest north from the Grafton area, either as a canopy co-dominant or within the mid-stratum. *Glochidion ferdinandii* is frequently found in the mid-stratum throughout the range. Other species that are abundant in the mid-stratum in regional variants of the community include *Acacia aulacocarpa*, *A. concurrens*, *A. disparrima*, *Melaleuca alternifolia*, *M. quinquenervia*, *M. nodosa*, *Allocasuarina littoralis*, *Alphitonia excelsa* and, less frequently, rainforest species such as *Aphananthe philippinensis*, *Cupaniopsis parvifolia* and *Elaeocarpus obovatus*. *Breynia oblongifolia* is the most frequent species making up the sparse shrub layer. The most widespread ground cover species are *Imperata cylindrica*, *Lomandra longifolia*, *Dianella caerulea*, *Entolasia marginate*, *Themeda triandra*, *Vernonia cinerea* and *Dichondra repens*.

Species less widespread, but frequently recorded in the groundcover in regional variants include *Ottochloa gracillima*, *Lobelia purpurascens*, *Lepidosperma laterale*, *Microlaena stipoides*, *Paspalidium distans*, *Polymeria calycina*, *Centella asiatica*, *Entolasia marginata* and *Oplismenus aemulus*. The vine *Parsonsia straminea* is a frequent presence throughout the range the community and other vines such as *Geitonoplesium cymosum* and *Gynochthodes jasminoides* are frequently found in some regional variants.

Habitat

Subtropical Coastal Floodplain Forest occurs at moderately low elevations (median elevation 30 m ASL) almost exclusively on fertile fluvial sediments including silts, sands clays and gravels. The majority of samples in northern parts of its distribution are located in alluvial valleys, on alluvial valley fill in the upper catchments (Troedson and Hashimoto 2008) or, less frequently, on Pleistocene terraces. Examples in the southern parts of the distribution occur most frequently on alluvial fans on the coastal plain and, to a lesser extent, in backwater swamps. These patterns in distribution partly reflect the fact the northern floodplains are more expansive and grade more gradually into the hilly hinterland than in the south. It is probable that Subtropical Coastal Floodplain Forest was more extensively distributed on the northern coastal plains prior to European colonization, although the community is likely to be replaced by Floodplain Subtropical Rainforest with increasing soil fertility.

Geographic distribution and relationship to established classifications

Subtropical Coastal Floodplain Forest is most extensively distributed from Gosford on the NSW central coast north to Hervey Bay in Queensland, although isolated outlying samples occur further to south as far as Jervis Bay and to the north as far as Gladstone. It is thought

that the community was once extensively distributed on the floodplains of the Tweed, Richmond, Clarence, Macleay, Hastings and Manning Rivers (Keith and Scott 2005). We documented relatively few samples on the coastal plain or alluvial valleys of any of these floodplains, suggesting that apart from the lowlands between Newcastle and Forster, Subtropical Coastal Floodplain Forest has been virtually eliminated from the lower floodplains and is now primarily restricted to valley fill in the upper catchments. Samples are particularly rare on the Tweed and Richmond Floodplains north of Coraki, which could also mean that Lowland Rainforests were the more prevalent vegetation type in those areas. More regional variants of Subtropical Coastal Floodplain Forest have been documented in Queensland than any other forest wetland in the south-east of that state. These include REs 12.3.2 (*Eucalyptus grandis* tall open forest on alluvial plains), 12.3.3 (*Eucalyptus tereticornis* woodland on Quaternary alluvium), 12.3.3d (*Eucalyptus moluccana* woodland on Quaternary alluvium), 12.3.4a (*Eucalyptus bancroftii* open-woodland on coastal alluvium), 12.3.11 (*Eucalyptus tereticornis* +/- *Eucalyptus siderophloia*, *Corymbia intermedia* open forest on alluvial plains usually near coast), 12.3.18 (*Melaleuca irbyana* low open forest on alluvial plain) and 12.3.19 (*Eucalyptus moluccana* and/or *Eucalyptus tereticornis* and *E. crebra* open forest to woodland, with a sparse to mid-dense understorey of *Melaleuca irbyana* on alluvial plains). A relatively small number of regional variants of Subtropical Coastal Floodplain have been documented in NSW. These include PCTs 3428 (Northern Lowland Red Gum-Swamp Turpentine Grassy Forest), 4045 (Northern Lowland Swamp Turpentine-Paperbark Forest) and 4046 (Northern Lowland Swamp Turpentine-Red Gum Forest) which intergrade extensively on relatively well-drained soils between Coffs Harbour and Casino. PCT 4003 (Northern Lowland Swamp Turpentine-Mahogany Forest) is also restricted to northern NSW and occurs in areas with impeded drainage and is transitional with forests of the sand plains (C6). PCT 4002 (Northern Lowland Orange Gum Dry Swamp Forest) is known from

relatively few samples scattered between Grafton and Taree. Southern variants fall within the circumscription of PCT 3436 (Hunter Coast Sandy Creekflat Low Paperbark Scrub), which is distributed between Port Macquarie and Gosford. Samples of this PCT broadly encompass a transition from River-flat Eucalypt Forest on Coastal Floodplains (southern samples) to Subtropical Coastal Floodplain Forest (northern samples), although locations within the range may be attributable to either community depending on local conditions. Some samples of the PCT may not strictly occur on floodplain alluvium but fall within the circumscription of floodplain communities provided drainage conditions are conducive to the presence of floodplain species.

Appendix S3.1: Relationships between Global Ecosystem Types (Level 5) and NSW (GET Level 6 sub-global types)

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
Lowland Rainforest on floodplain	C12/C13	3004	Far North Bangalow Palm Swamp Forest	The PCT is transitional between floodplain subtropical rainforest and floodplain swamp rainforest, two of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C8	3005	Far North Floodplain Subtropical Rainforest	The PCT is a form of warm temperate floodplain rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C12	3006	Far North Riverine Bangalow Palm Subtropical Rainforest	The PCT is a form of floodplain subtropical rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C12	3007	Far North Lowland Black Bean Riverine Rainforest	The PCT is a form of floodplain subtropical rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C13	3012	Far North Waterhousea Riparian Rainforest	The PCT is a form of floodplain swamp rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C12	3015	Lower Richmond Sandflat Subtropical Rainforest	The PCT is a form of floodplain subtropical rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
Lowland Rainforest on floodplain	C12	3017	Mid North Lowland Floodplain Rainforest	The PCT is a form of floodplain subtropical rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C8	3025	Central Coast Gallery Rainforest	The PCT is a form of warm temperate floodplain rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C8/C12	3059	Clarence Lowland Riparian Red Gum Wet Forest	The PCT is transitional between floodplain subtropical rainforest and floodplain warm temperate rainforest, two of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C8/C12	3066	Far North Floodplain Dry Rainforest	The PCT is transitional between floodplain subtropical rainforest and floodplain warm temperate rainforest, two of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C8/C12	3089	Lower North Waterhousea Riparian Rainforest	The PCT is transitional between floodplain subtropical rainforest and floodplain warm temperate rainforest, two of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C8/C12	3091	Lower North Waterhousea-Water Gum Rainforest	The PCT is transitional between floodplain subtropical rainforest and floodplain warm temperate rainforest, two of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C8	3092	Lower Richmond Floodplain Waterhousea	The PCT is a form of warm temperate floodplain rainforest, one of three closely related rainforest

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
			Forest	types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C8	3102	Northern Lowland Swamp Turpentine Wet Forest	The PCT is a form of warm temperate floodplain rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C12	3103	Nymboida Water Gum-Myrtle Riparian Forest	The PCT is a form of floodplain subtropical rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C12	3104	Richmond Valley Riparian Waterhousea Forest	The PCT is a form of floodplain subtropical rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C13	3988	Far North Mesophyll Paperbark Swamp Forest	The PCT is a form of floodplain swamp rainforest, one of three closely related rainforest types which collectively comprise Lowland Rainforest on Coastal Floodplains as circumscribed here
Lowland Rainforest on floodplain	C13/C17	4034	Far North Swamp Oak-Tuckeroo Swamp Fringe Forest	The PCT is transitional between Floodplain Swamp Rainforest and Subtropical Coastal Floodplain Forest. Depending on the assemblage of species present, examples fall within the circumscription of either Lowland Rainforest on Coastal Floodplains or Subtropical Coastal Floodplain Forest as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C18	3145	Cumberland Bangalay x Blue Gum River-flat	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as circumscribed here

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
			Forest	
River-flat Eucalypt Forest on Coastal Floodplains	C18	3185	Far South River-flat Wet Forest	The PCT is primarily an assemblage of moist foot slopes, although examples occurring on alluvial flats adjacent to larger waterways are likely to fall within the circumscription of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as described here
River-flat Eucalypt Forest on Coastal Floodplains	C18	3188	South Coast River-flat Peppermint Forest	The PCT is primarily an assemblage of moist foot slopes, although examples occurring on alluvial flats adjacent to larger waterways are likely to fall within the circumscription of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as described here
River-flat Eucalypt Forest on Coastal Floodplains	C18	3192	South Coast River-flat Ribbon Gum Forest	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15/C18	3258	Sydney Basin Creekflat Blue Gum-Apple Forest	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (coastal plain variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15	3272	South Coast Lowland Creekflat Forest	Samples span the upper end of drainage gradients and include species characteristic of well-drained soils and/or lithic substrates. The community may occur on moist foot slopes but falls within the circumscription of River-flat Eucalypt Forest on Coastal Floodplains (coastal plain variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	Not sampled	3328	Lower Hunter Red Gum-Paperbark River-flat	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as circumscribed here

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
			Forest	
River-flat Eucalypt Forest on Coastal Floodplains	C15/C17	3435	Hunter Coast Lowland Flats Damp Forest	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (coastal plain variant) as circumscribed here, although northern examples may be closer to Subtropical Coastal Floodplain Forest.
River-flat Eucalypt Forest on Coastal Floodplains	C18	4015	Central Hunter Swamp Oak Riparian Forest	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15	4019	Coastal Alluvial Bangalay Forest	Samples span the upper end of drainage gradients and include species characteristic of well-drained soils and/or lithic substrates. The community contains some species characteristic of Swamp Sclerophyll Forest on Coastal Floodplains but falls within the circumscription of Coastal River-flat Eucalypt Forest (coastal plain variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15	4020	Coastal Creekflat Layered Grass-Sedge Swamp Forest	The PCT comprises one part of the Coastal River-flat Eucalypt Forest (near-coastal plain variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15	4021	Coastal Creekline Dry Shrubby Swamp Forest	Samples span the upper end of drainage gradients and include species characteristic of well-drained soils and/or lithic substrates. The community contains some species characteristic of Swamp Sclerophyll Forest on Coastal Floodplains but falls within the circumscription of Coastal River-flat Eucalypt Forest (coastal plain variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C18	4023	Coastal Valleys Swamp	Although the dominant species are characteristic of the Swamp Oak Floodplain Forest, the

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
Floodplains			Oak Riparian Forest	assemblage of species is more consistent with River-flat Eucalypt Forest on Coastal Floodplains and the PCT falls within the circumscription of the latter as described here.
River-flat Eucalypt Forest on Coastal Floodplains	C18	4024	Cumberland Blue Box River-flat Forest	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C18	4025	Cumberland Red Gum River-flat Forest	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C18	4035	Far South Floodplain Wetland Paperbark Scrub	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15	4036	Hunter Coast Lake Flats Apple Forest	The PCT comprises one part of the River-flat Eucalypt Forest on Coastal Floodplains (coastal plain variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15	4039	Hunter Range Creekflat Apple-Red Gum Forest	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (coastal plain variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15	4042	Lower North River-flat Eucalypt-Paperbark Forest	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (coastal plain variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15	4044	Northern Creekflat Eucalypt-Paperbark	The PCT comprises one part of the River-flat Eucalypt Forest on Coastal Floodplains (coastal plain variant) as circumscribed here

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
			Mesic Swamp Forest	variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C15	4047	Northern Swamp Mahogany-Bottlebrush Swamp Forest	Although the dominant species are characteristic of the Swamp Sclerophyll Forest assemblage the balance of species is more consistent with less waterlogged vegetation types and falls within the circumscription of River-flat Eucalypt Forest on Coastal Floodplains (coastal plain variant) as circumscribed here.
River-flat Eucalypt Forest on Coastal Floodplains	C15	4049	South Coast Floodplain Grassy Swamp Forest	Although the dominant species are characteristic of the Swamp Oak Floodplain Forest, the assemblage of species is more consistent with the near-coastal plain variant of River-flat Eucalypt Forest on Coastal Floodplains and the PCT falls within the circumscription of the latter (coastal plain variant) as described here.
River-flat Eucalypt Forest on Coastal Floodplains	C15	4057	Sydney Creekflat Swamp Mahogany-Paperbark Forest	Samples span the upper end of drainage gradients and include species characteristic of well-drained soils and/or lithic substrates. The community contains some species characteristic of Swamp Sclerophyll Forest on Coastal Floodplains but falls within the circumscription of Coastal River-flat Eucalypt Forest (coastal plain variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	C18	4058	Sydney Hinterland Red Gum River-flat Forest	The PCT comprises one part of River-flat Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains	Not sampled	4138	Araluen Valley Flats Red Gum Forest	The PCT may include assemblages occurring on moist foot slopes, although examples occurring on alluvial flats adjacent to larger waterways are likely to fall within the circumscription of River-flat

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
				Eucalypt Forest on Coastal Floodplains (alluvial valley variant) as circumscribed here
River-flat Eucalypt Forest on Coastal Floodplains (part), (Subtropical Coastal Floodplain Forest)	C17/C15	3436	Hunter Coast Sandy Creekflat Low Paperbark Scrub	The PCT encompasses a transition from River-flat Eucalypt Forest on Coastal Floodplains (southern samples) to Subtropical Coastal Floodplain Forest (northern samples). Samples remote from the floodplain may occur on lithic substrates but fall within the circumscription of floodplain communities provided drainage conditions are conducive.
River-flat Eucalypt Forest on Coastal Floodplains (part), Swamp Sclerophyll on Coastal Floodplains (part)	C15/C7	4009	Shoalhaven Lowland Flats Wet Swamp Forest	The PCT encompasses a transition from River-flat Eucalypt Forest (coastal plain variant) on Coastal Floodplains to Swamp Sclerophyll Forest on Coastal Floodplains with increasing frequency or duration of inundation. Although the dominant species are characteristic of the Swamp Sclerophyll Forest assemblage, examples in which the balance of species is consistent with less waterlogged vegetation types fall within the circumscription of River-flat Eucalypt Forest on Coastal Floodplains (coastal plain variant) as circumscribed here.
Subtropical Coastal Floodplain Forest	Not sampled	3067	Far North Floodplain Wet Layered Forest	The PCT is likely to comprise one part of Subtropical Coastal Floodplain Forest as circumscribed here
Subtropical Coastal Floodplain Forest	C17	3428	Northern Lowland Red Gum-Swamp Turpentine Grassy Forest	The PCT comprises one part of Subtropical Coastal Floodplain Forest as circumscribed here
Subtropical Coastal Floodplain Forest	C17/C15	4002	Northern Lowland Orange Gum Dry	The PCT comprises one part of Subtropical Coastal Floodplain Forest as circumscribed here

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
			Swamp Forest	
Subtropical Coastal Floodplain Forest	C17	4045	Northern Lowland Swamp Turpentine- Paperbark Forest	The PCT comprises one part of Subtropical Coastal Floodplain Forest as circumscribed here
Subtropical Coastal Floodplain Forest	C17	4046	Northern Lowland Swamp Turpentine-Red Gum Forest	The PCT comprises one part of Subtropical Coastal Floodplain Forest as circumscribed here
Subtropical Coastal Floodplain Forest (part), Swamp Sclerophyll on Coastal Floodplains (part)	C17/C7	4003	Northern Lowland Swamp Turpentine- Mahogany Forest	The PCT encompasses a transition from Subtropical Coastal Floodplain Forest to Swamp Sclerophyll Forest on Coastal Floodplains with increasing frequency or duration of inundation.
Swamp Oak Floodplain Forest	C14	3987	Far North Floodplain Paperbark-Swamp Oak Floodplain Forest	The PCT comprises one part of the Swamp Oak Floodplain Forest as circumscribed here
Swamp Oak Floodplain Forest	C14	3993	Far North Swamp Oak- Paperbark Tidal Forest	The PCT comprises one part of the Swamp Oak Floodplain Forest as circumscribed here
Swamp Oak Floodplain Forest	C14	4016	Clarence Floodplain Swamp Oak Floodplain	The PCT comprises one part of the Swamp Oak Floodplain Forest as circumscribed here

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
			Forest	
Swamp Oak Floodplain Forest	C14	4028	Estuarine Swamp Oak Twig-rush Forest	The PCT comprises one part of the Swamp Oak Floodplain Forest as circumscribed here
Swamp Oak Floodplain Forest	C14	4030	Far North Estuarine Swamp Oak Floodplain Forest	The PCT comprises one part of the Swamp Oak Floodplain Forest as circumscribed here
Swamp Oak Floodplain Forest	C14	4038	Hunter Estuarine Melaleuca nodosa Scrub	The PCT comprises one part of the Swamp Oak Floodplain Forest as circumscribed here
Swamp Oak Floodplain Forest	C14/C11	4040	South Coast Selliera-Sea Rush Swamp Oak Saltmarsh	Samples span a gradient of increasing salinity associated with a transition from Swamp Oak Floodplain Forest on Coastal Floodplains to Estuarine Fringe Forest. Samples located in the most saline areas are likely to fall outside the circumscription of Swamp Oak Floodplain Forest as circumscribed here.
Swamp Oak Floodplain Forest	C14/C15	4048	Northern Swamp Oak- Paperbark Forest	The PCT comprises one part of the Swamp Oak Floodplain Forest although some examples may contain species characteristic of a transition to Coastal River-flat Eucalypt Forest
Swamp Oak Floodplain Forest	C14	4056	Southern Estuarine Swamp Paperbark Creekflat Scrub	The PCT comprises one part of the Swamp Oak Floodplain Forest as circumscribed here
Swamp Oak Floodplain Forest (part)	C19/C14	4050	South Coast Floodplain	Samples span the lower end of drainage gradients encompassing a transition from Swamp Oak

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
			Wetland Paperbark Scrub	Floodplain Forest to Freshwater wetlands.
Swamp Sclerophyll Forest on Coastal Floodplains	C15	3983	Central Coast Flats Mesic Swamp Forest	Close to Keith and Scott's (2005) original concept of swamp sclerophyll forest on floodplains. Samples frequently contain a high proportion of species characteristic of the assemblage and so it is likely to include within the current circumscription, although the frequent presence of species characteristic of relatively well-drained locations suggests compositional changes may have occurred in response to alterations to drainage
Swamp Sclerophyll Forest on Coastal Floodplains	C7	3985	Coastal Floodplain Swamp Paperbark Scrub	Samples span a gradient of increasing salinity associated with a transition to Swamp Oak Floodplain Forest on Coastal Floodplains. The relatively high frequency of occurrence of <i>Casuarina glauca</i> is symptomatic of a saline influence however the presence of sclerophyll shrubs and graminoids suggest the community is within the scope of Swamp Sclerophyll Forest on Coastal Floodplains as circumscribed here.
Swamp Sclerophyll Forest on Coastal Floodplains	C7	3986	Coastal Sands Swamp Mahogany Rush Forest	Close to Keith and Scott's (2005) original concept of swamp sclerophyll forest on floodplains although samples at the drier end of drainage gradients may be marginal inclusions within Swamp Sclerophyll Forest on Coastal Floodplains as circumscribed here
Swamp Sclerophyll Forest on Coastal Floodplains	C7	3989	Far North Paperbark Fern Swamp Forest	Close to Keith and Scott's (2005) original concept of swamp sclerophyll forest on floodplains and included within Swamp Sclerophyll Forest on Coastal Floodplains as circumscribed here

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
Swamp Sclerophyll Forest on Coastal Floodplains		3990	Far North Paperbark Gahnia Swamp Forest	Close to Keith and Scott's (2005) original concept of swamp sclerophyll forest on floodplains and included within Swamp Sclerophyll Forest on Coastal Floodplains as circumscribed here
Swamp Sclerophyll Forest on Coastal Floodplains	C7	3995	Hunter Coast Paperbark-Swamp Mahogany Forest	Samples span the upper end of drainage gradients and include examples of Swamp Sclerophyll Forest but possibly also samples occurring on lithic substrates. The latter fall within the circumscription of the provided they comprise species of its characteristic assemblage
Swamp Sclerophyll Forest on Coastal Floodplains	C7	3997	Hunter Coast Sandplain Sedge Paperbark Wetland	Samples span the lower end of drainage gradients and include examples of both Swamp Sclerophyll Forest and Freshwater Wetlands on Coastal Floodplains as circumscribed here. Examples with sparse tree cover are included within the former.
Swamp Sclerophyll Forest on Coastal Floodplains	C14/C7	4000	Northern Estuarine Paperbark Sedge Forest	Samples span a gradient of increasing salinity associated with a transition to Swamp Oak Floodplain Forest on Coastal Floodplains but are within the scope of Swamp Sclerophyll Forest on Coastal Floodplains as circumscribed here.
Swamp Sclerophyll Forest on Coastal Floodplains	C14/C7	4001	Northern Floodplain Paperbark Fern Swamp Forest	Samples span a gradient of increasing salinity associated with a transition to Swamp Oak Floodplain Forest on Coastal Floodplains. The relatively high frequency of occurrence of <i>Casuarina glauca</i> and <i>Carex appressa</i> is symptomatic of a saline influence. However, the presence of sclerophyll shrubs and graminoids suggest the community is within the scope of Swamp Sclerophyll Forest on Coastal Floodplains as circumscribed here, although the particular combination of species suggests alterations to hydrology may have induced changes to pre-European composition that may be

Keith and Scott (2005) class	Cluster	PCT ID	PCT Name	Comment
				continuing to unfold
Swamp Sclerophyll Forest on Coastal Floodplains	C7	4004	Northern Melaleuca quinquenervia Swamp Forest	Close to Keith and Scott's (2005) original concept of swamp sclerophyll forest on floodplains and included within Swamp Sclerophyll Forest on Coastal Floodplains as circumscribed here
Swamp Sclerophyll Forest on Coastal Floodplains	C7	4006	Northern Paperbark-Swamp Mahogany Saw-sedge Forest	Close to Keith and Scott's (2005) original concept of swamp sclerophyll forest on floodplains and included within within Swamp Sclerophyll Forest on Coastal Floodplains as circumscribed here

Appendix S3.2 Relationships between Global Ecosystem Types (Level 5) and Queensland Regional Ecosystems (GET Level 6 sub-global types)

Regional Ecosystem	Regional Ecosystem	Pre-1750 (ha)	Extant (ha)	% decline	Notes
Swamp Sclerophyll Forest on Coastal Floodplains (Global Ecosystem Level 5 type C7)					
Melaleuca quinquenervia, Eucalyptus robusta woodland on coastal alluvium	12.3.4	17,000	8,000	53	Extensively cleared for pine plantation
Melaleuca quinquenervia, Casuarina glauca +/- Eucalyptus tereticornis open-forest on lowest river terraces	12.3.5a	14,194	2,721	81	
Melaleuca quinquenervia open forest on coastal alluvium	12.3.5	45,098	20,106	55	Extensively cleared for sugar cane production and urban development. Ongoing reduction in distribution estimated to be 1% per annum.

Regional Ecosystem	Regional Ecosystem	Pre-1750 (ha)	Extant (ha)	% decline	Notes
Melaleuca quinquenervia +/- Eucalyptus tereticornis, Lophostemon suaveolens, Corymbia intermedia open forest on coastal alluvial plains	12.3.6	32,148	11,994	63	Generally a palustrine wetland although also some areas have been converted to lacustrine water bodies associated with the construction of bunding and levees.
Melaleuca quinquenervia, Casuarina glauca +/- Eucalyptus tereticornis, E. siderophloia open forest on low coastal alluvial plains	12.3.20	15,000	3,000	80	Extensively cleared for sugar can and urban development. Subject to weed invasion, especially Baccharis halimifolia. Approximately 1% annual reduction in distribution, expected to continue.
	Total	123,440	45,821	63	
Swamp Oak Floodplain Forest					
(Global Ecosystem Level 5 type C14)					
Casuarina glauca woodland on margins of marine clay plains	12.1.1	6,000	4,000	33	Subject to weed invasion, especially Baccharis halimifolia
Lowland Rainforest on floodplain					
(Global Ecosystem Level 5 types C8, C12, C13)					

Regional Ecosystem	Regional Ecosystem	Pre-1750 (ha)	Extant (ha)	% decline	Notes
Gallery rainforest (notophyll vine forest) on alluvial plains	12.3.1	38,549	9,934	74	Extensively cleared for agriculture. Prone to invasion by weeds such as camphor laurel Cinnamomum camphora, broad leaved pepper tree Schinus terebinthifolius, cat's claw creeper Macfadyena unguis-cati on margins and when disturbed
Complex microphyll vine forest on alluvial plains	12.3.21	2,000	400	80	Prone to invasion by weeds such as camphor laurel Cinnamomum camphora, broad leaved pepper tree Schinus terebinthifolius, cat's claw creeper Dolichandra unguis-cati on margins and when disturbed.
		40,549	10,334	75	
Subtropical Coastal Floodplain forest (Global Ecosystem Level 5 type C17)					
Eucalyptus grandis tall open forest on alluvial plains	12.3.2	22,000	7,000	68	Habitat fragmented by land uses such as horticulture and rural residential. Much of this RE is prone to infestation by weeds, especially Lantana camara.

Regional Ecosystem	Regional Ecosystem	Pre-1750 (ha)	Extant (ha)	% decline	Notes
Eucalyptus tereticornis woodland on Quaternary alluvium	12.3.3	412,046	39,440	90	Extensively cleared for agriculture and horticulture. Remnants subject to dieback and blackberry invasion.
Eucalyptus moluccana woodland on Quaternary alluvium	12.3.3d	13,072	1,100	92	
Eucalyptus bancroftii open-woodland on coastal alluvium	12.3.4a	215	51	76	
Eucalyptus tereticornis +/- Eucalyptus siderophloia, Corymbia intermedia open forest on alluvial plains usually near coast	12.3.11	189,082	46,988	76	Extensively cleared and modified in populous southern parts of the South East Queensland bioregion
Melaleuca irbyana low open forest on alluvial plain	12.3.18	2,000	100	95	Restricted to the Ipswich and Jimboomba regions and the Lockyer and Fassifern Valleys.

Regional Ecosystem	Regional Ecosystem	Pre-1750 (ha)	Extant (ha)	% decline	Notes
Eucalyptus moluccana and/or Eucalyptus tereticornis and E. crebra open forest to woodland, with a sparse to mid-dense understorey of Melaleuca irbyana on alluvial plains	12.3.19	3,000	300	90	Restricted to the Ipswich and Jimboomba regions and the Lockyer and Fassifern Valleys.
		642,415	94,979	85	

Appendix S3.3 Relationships between Global Ecosystem Types (Level 5) and Victorian Ecological Vegetation Classes (GET Level 6 sub-global types)

Ecological Vegetation Class	Number	Global Ecosystem Level 5	Comment	Status
Swamp Scrub	53	C7/C14	Examples of this EVC occurring in the far north-east corner of Victoria may fall within Swamp Oak Floodplain Forest or Swamp Sclerophyll Forest as circumscribed here	Endangered (<10% remains)
Swampy Riparian Woodland	83	C18	EVC falls within Coastal River-flat Eucalypt Forest as circumscribed	Endangered (<10% remains)

Ecological Vegetation Class	Number	Global Ecosystem Level 5	Comment	Status
Floodplain Riparian Woodland	56	C18	here EVC falls within Coastal River-flat Eucalypt Forest as circumscribed	Endangered (<10% remains)
Swampy Woodland	937	C18	here EVC falls within Coastal River-flat Eucalypt Forest as circumscribed	Endangered (<10% remains)
Riparian Forest	18	C18	here EVC falls within Coastal River-flat Eucalypt Forest as circumscribed here	Vulnerable (30 - 90% remains) or Depleted (30 – 50% remains)

Appendix S4: Species with a statistically higher frequency of occurrence (cumulative hypergeometric probability ≥ 0.999) within a GET Level 5 class than across the entire sample space. Only species with frequency ≥ 0.25 are listed.

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C1	<i>Aotus ericoides</i>	172	0.3314	57	0.04977	287	positive
C1	<i>Baeckeke frutescens</i>	172	0.4767	82	0.01493	151	positive
C1	<i>Baeckeke imbricata</i>	172	0.3895	67	0.005626	93	positive
C1	<i>Baloskion pallens</i>	172	0.2733	47	0.03527	210	positive
C1	<i>Banksia ericifolia</i>	172	0.5349	92	0.0238	202	positive
C1	<i>Banksia oblongifolia</i>	172	0.6047	104	0.06427	401	positive
C1	<i>Bauera capitata</i>	172	0.3779	65	0.004112	84	positive
C1	<i>Baumea muelleri</i>	172	0.3663	63	0.0006492	66	positive
C1	<i>Blandfordia grandiflora</i>	172	0.3198	55	0.007141	88	positive
C1	<i>Boronia falcifolia</i>	172	0.6221	107	0.001948	116	positive
C1	<i>Burchardia umbellata</i>	172	0.314	54	0.02532	171	positive
C1	<i>Callistemon pachyphyllus</i>	172	0.4012	69	0.04047	256	positive
C1	<i>Cassytha glabella</i>	172	0.6512	112	0.1114	627	positive
C1	<i>Dillwynia floribunda</i>	172	0.4477	77	0.009305	120	positive
C1	<i>Drosera auriculata</i>	172	0.2965	51	0.009955	97	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C1	<i>Empodisma minus</i>	172	0.4128	71	0.02467	185	positive
C1	<i>Epacris microphylla</i>	172	0.3547	61	0.01385	125	positive
C1	<i>Epacris obtusifolia</i>	172	0.6977	120	0.01342	182	positive
C1	<i>Eurychorda complanata</i>	172	0.2791	48	0.0119	103	positive
C1	<i>Gahnia sieberiana</i>	172	0.3953	68	0.04718	286	positive
C1	<i>Gonocarpus micranthus</i>	172	0.25	43	0.04263	240	positive
C1	<i>Hibbertia salicifolia</i>	172	0.3663	63	0.001082	68	positive
C1	<i>Leptospermum liversidgei</i>	172	0.8779	151	0.009089	193	positive
C1	<i>Leptospermum polygalifolium</i>	172	0.2674	46	0.1467	724	positive
C1	<i>Leptocarpus tenax</i>	172	0.564	97	0.06319	389	positive
C1	<i>Melaleuca nodosa</i>	172	0.2907	50	0.1164	588	positive
C1	<i>Pimelea linifolia</i>	172	0.6047	104	0.09781	556	positive
C1	<i>Pseudanthus orientalis</i>	172	0.314	54	0.01883	141	positive
C1	<i>Schoenus brevifolius</i>	172	0.2791	48	0.07899	413	positive
C1	<i>Selaginella uliginosa</i>	172	0.5116	88	0.04783	309	positive
C1	<i>Sprengelia sprengelioides</i>	172	0.6337	109	0.00238	120	positive
C1	<i>Xanthorrhoea fulva</i>	172	0.8721	150	0.03376	306	positive
C2	<i>Aegiceras corniculatum</i>	206	0.2767	57	0.006758	88	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C2	<i>Baloskion pallens</i>	206	0.4757	98	0.01591	171	positive
C2	<i>Casuarina glauca</i>	206	0.2767	57	0.1652	815	positive
C2	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	206	0.5631	116	0.04949	343	positive
C2	<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	206	0.5874	121	0.02354	229	positive
C2	<i>Sporobolus virginicus</i>	206	0.733	151	0.01134	203	positive
C2	<i>Suaeda australis</i>	206	0.2621	54	0.006758	85	positive
C3	<i>Acacia longifolia</i>	74	0.8378	62	0.1602	818	positive
C3	<i>Banksia integrifolia</i>	74	0.3378	25	0.08455	424	positive
C3	<i>Carpobrotus glaucescens</i>	74	0.4459	33	0.003602	50	positive
C3	<i>Ficinia nodosa</i>	74	0.3514	26	0.02691	153	positive
C3	<i>Leptospermum laevigatum</i>	74	0.5811	43	0.03708	218	positive
C3	<i>Scaevola calendulacea</i>	74	0.2838	21	0.0006357	24	positive
C3	<i>Spinifex sericeus</i>	74	0.5541	41	0.001271	47	positive
C4	<i>Acacia suaveolens</i>	286	0.5559	159	0.05835	422	positive
C4	<i>Acacia ulicifolia</i>	286	0.5455	156	0.07389	489	positive
C4	<i>Banksia aemula</i>	286	0.7867	225	0.03018	361	positive
C4	<i>Banksia oblongifolia</i>	286	0.2797	80	0.07122	401	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C4	<i>Boronia pinnata</i>	286	0.2727	78	0.005103	101	positive
C4	<i>Bossiaea ensata</i>	286	0.3881	111	0.01553	181	positive
C4	<i>Bossiaea heterophylla</i>	286	0.4685	134	0.0335	285	positive
C4	<i>Brachyloma daphnoides</i>	286	0.3252	93	0.009984	138	positive
C4	<i>Cassutha glabella</i>	286	0.4406	126	0.1112	627	positive
C4	<i>Caustis recurvata</i>	286	0.6224	178	0.01464	244	positive
C4	<i>Coleocarya gracilis</i>	286	0.2552	73	0.001109	78	positive
C4	<i>Conospermum taxifolium</i>	286	0.2902	83	0.0162	156	positive
C4	<i>Dampiera stricta</i>	286	0.3217	92	0.03239	238	positive
C4	<i>Dillwynia retorta</i>	286	0.5385	154	0.04371	351	positive
C4	<i>Eriostemon australasius</i>	286	0.3357	96	0.01043	143	positive
C4	<i>Gompholobium virgatum</i>	286	0.3916	112	0.005103	135	positive
C4	<i>Hibbertia fasciculata</i>	286	0.3671	105	0.01487	172	positive
C4	<i>Homoranthus virgatus</i>	286	0.3462	99	0.006213	127	positive
C4	<i>Hypolaena fastigiata</i>	286	0.451	129	0.01575	200	positive
C4	<i>Isopogon anemonifolius</i>	286	0.2622	75	0.01398	138	positive
C4	<i>Leptomeria acida</i>	286	0.2937	84	0.02086	178	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C4	<i>Leptospermum polygalifolium</i>	286	0.493	141	0.1294	724	positive
C4	<i>Leptospermum trinervium</i>	286	0.5839	167	0.04881	387	positive
C4	<i>Leucopogon ericoides</i>	286	0.4126	118	0.02285	221	positive
C4	<i>Leucopogon leptospermoides</i>	286	0.6224	178	0.02263	280	positive
C4	<i>Leucopogon virgatus</i>	286	0.3776	108	0.002663	120	positive
C4	<i>Lomandra glauca</i>	286	0.3182	91	0.02086	185	positive
C4	<i>Melaleuca nodosa</i>	286	0.4266	122	0.1034	588	positive
C4	<i>Monotoca elliptica</i>	286	0.3042	87	0.1058	564	positive
C4	<i>Monotoca scoparia</i>	286	0.6399	183	0.0264	302	positive
C4	<i>Ochrosperma lineare</i>	286	0.3357	96	0.004881	118	positive
C4	<i>Persoonia virgata</i>	286	0.3462	99	0.0162	172	positive
C4	<i>Phyllota phyllicoides</i>	286	0.3182	91	0.007766	126	positive
C4	<i>Pimelea linifolia</i>	286	0.5524	158	0.08831	556	positive
C4	<i>Platysace ericoides</i>	286	0.3881	111	0.02263	213	positive
C4	<i>Ricinocarpos pinifolius</i>	286	0.549	157	0.04127	343	positive
C4	<i>Schoenus ericetorum</i>	286	0.4406	126	0.004881	148	positive
C4	<i>Styphelia viridis</i>	286	0.2657	76	0.0071	108	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C4	<i>Xanthorrhoea johnsonii</i>	286	0.3077	88	0.006656	118	positive
C4	<i>Xanthosia pilosa</i>	286	0.2937	84	0.01575	155	positive
C4	<i>Zieria laxiflora</i>	286	0.2937	84	0.005103	107	positive
C5	<i>Acacia longifolia</i>	423	0.4563	193	0.143	818	positive
C5	<i>Acacia suaveolens</i>	423	0.487	206	0.04943	422	positive
C5	<i>Acacia ulicifolia</i>	423	0.5532	234	0.05835	489	positive
C5	<i>Angophora costata</i>	423	0.5366	227	0.05652	474	positive
C5	<i>Aotus ericoides</i>	423	0.3215	136	0.03455	287	positive
C5	<i>Banksia serrata</i>	423	0.7258	307	0.03204	447	positive
C5	<i>Billardiera scandens</i>	423	0.3262	138	0.08375	504	positive
C5	<i>Bossiaea heterophylla</i>	423	0.3002	127	0.03616	285	positive
C5	<i>Corymbia gummifera</i>	423	0.331	140	0.03799	306	positive
C5	<i>Dianella caerulea</i>	423	0.6879	291	0.2542	1402	positive
C5	<i>Dillwynia retorta</i>	423	0.3688	156	0.04462	351	positive
C5	<i>Eucalyptus pilularis</i>	423	0.4846	205	0.05126	429	positive
C5	<i>Gonocarpus teucrioides</i>	423	0.5485	232	0.04211	416	positive
C5	<i>Hardenbergia violacea</i>	423	0.3641	154	0.04737	361	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C5	<i>Hibbertia linearis</i>	423	0.3333	141	0.01922	225	positive
C5	<i>Imperata cylindrica</i>	423	0.487	206	0.2249	1189	positive
C5	<i>Leptospermum trinervium</i>	423	0.2813	119	0.06133	387	positive
C5	<i>Leucopogon lanceolatus</i>	423	0.4539	192	0.06911	494	positive
C5	<i>Lomandra longifolia</i>	423	0.7636	323	0.3195	1719	positive
C5	<i>Monotoca elliptica</i>	423	0.6619	280	0.06499	564	positive
C5	<i>Pandorea pandorana</i> subsp. <i>pandorana</i>	423	0.2553	108	0.1128	601	positive
C5	<i>Persoonia levis</i>	423	0.3641	154	0.02677	271	positive
C5	<i>Pomax umbellata</i>	423	0.4846	205	0.06682	497	positive
C5	<i>Pteridium esculentum</i>	423	0.8794	372	0.246	1447	positive
C5	<i>Ricinocarpos pinifolius</i>	423	0.3688	156	0.04279	343	positive
C5	<i>Themeda triandra</i>	423	0.357	151	0.1416	770	positive
C6	<i>Austromyrtus dulcis</i>	156	0.4615	72	0.03451	232	positive
C6	<i>Baloskion tetraphyllum</i>	156	0.5641	88	0.05003	320	positive
C6	<i>Dianella caerulea</i>	156	0.4744	74	0.2864	1402	positive
C6	<i>Elaeocarpus reticulatus</i>	156	0.75	117	0.07311	456	positive
C6	<i>Endiandra sieberi</i>	156	0.359	56	0.02566	175	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C6	<i>Eucalyptus robusta</i>	156	0.3718	58	0.113	582	positive
C6	<i>Gahnia clarkei</i>	156	0.6346	99	0.1762	916	positive
C6	<i>Hibbertia scandens</i>	156	0.6731	105	0.1154	640	positive
C6	<i>Leptospermum polygalifolium</i>	156	0.3269	51	0.1451	724	positive
C6	<i>Leucopogon lanceolatus</i>	156	0.4038	63	0.09295	494	positive
C6	<i>Livistona australis</i>	156	0.3462	54	0.07742	413	positive
C6	<i>Lomandra longifolia</i>	156	0.6859	107	0.3476	1719	positive
C6	<i>Lophostemon suaveolens</i>	156	0.2564	40	0.06836	357	positive
C6	<i>Marsdenia rostrata</i>	156	0.4231	66	0.07742	425	positive
C6	<i>Melaleuca quinquenervia</i>	156	0.5833	91	0.1799	925	positive
C6	<i>Pandorea pandorana</i> subsp. <i>pandorana</i>	156	0.2949	46	0.1197	601	positive
C6	<i>Parsonsia straminea</i>	156	0.5577	87	0.2855	1411	positive
C6	<i>Pomax umbellata</i>	156	0.5064	79	0.09014	497	positive
C6	<i>Pteridium esculentum</i>	156	0.8269	129	0.2842	1447	positive
C6	<i>Smilax australis</i>	156	0.4167	65	0.1264	651	positive
C6	<i>Smilax glycyphylla</i>	156	0.4551	71	0.07246	407	positive
C6	<i>Telmatoblechnum indicum</i>	156	0.2756	43	0.08389	432	positive
C7	<i>Baumea articulata</i>	270	0.3889	105	0.04157	293	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C7	<i>Baumea rubiginosa</i>	270	0.2889	78	0.02963	212	positive
C7	<i>Casuarina glauca</i>	270	0.4	108	0.1563	815	positive
C7	<i>Eucalyptus robusta</i>	270	0.4444	120	0.1021	582	positive
C7	<i>Gahnia clarkei</i>	270	0.5148	139	0.1718	916	positive
C7	<i>Hypolepis muelleri</i>	270	0.2889	78	0.07871	434	positive
C7	<i>Melaleuca quinquenervia</i>	270	0.8259	223	0.1552	925	positive
C7	<i>Parsonsia straminea</i>	270	0.6333	171	0.2742	1411	positive
C7	<i>Phragmites australis</i>	270	0.3593	97	0.0535	339	positive
C7	<i>Telmatoblechnum indicum</i>	270	0.7333	198	0.05174	432	positive
C8	<i>Acmena smithii</i>	316	0.6076	192	0.06835	498	positive
C8	<i>Alphitonia excelsa</i>	316	0.288	91	0.08778	484	positive
C8	<i>Archontophoenix cunninghamiana</i>	316	0.3006	95	0.03842	267	positive
C8	<i>Blechnum cartilagineum</i>	316	0.3133	99	0.02301	202	positive
C8	<i>Doodia aspera</i>	316	0.3671	116	0.01832	198	positive
C8	<i>Breynia oblongifolia</i>	316	0.4715	149	0.1767	940	positive
C8	<i>Cissus antarctica</i>	316	0.5285	167	0.03127	307	positive
C8	<i>Cissus hypoglauca</i>	316	0.3924	124	0.04713	335	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C8	<i>Cordyline stricta</i>	316	0.2785	88	0.02278	190	positive
C8	<i>Cryptocarya microneura</i>	316	0.3386	107	0.02167	204	positive
C8	<i>Dioscorea transversa</i>	316	0.5411	171	0.02077	264	positive
C8	<i>Eupomatia laurina</i>	316	0.3006	95	0.005137	118	positive
C8	<i>Eustrephus latifolius</i>	316	0.3259	103	0.1074	584	positive
C8	<i>Ficus coronata</i>	316	0.4684	148	0.04266	339	positive
C8	<i>Geitonoplesium cymosum</i>	316	0.6171	195	0.1405	824	positive
C8	<i>Glochidion ferdinandii</i>	316	0.4241	134	0.1671	882	positive
C8	<i>Guioa semiglauca</i>	316	0.5285	167	0.03775	336	positive
C8	<i>Gymnostachys anceps</i>	316	0.3766	119	0.01385	181	positive
C8	<i>Gynochthodes jasminoides</i>	316	0.7816	247	0.09448	670	positive
C8	<i>Livistona australis</i>	316	0.3418	108	0.06813	413	positive
C8	<i>Maclura cochinchinensis</i>	316	0.2595	82	0.044	279	positive
C8	<i>Myrsine variabilis</i>	316	0.2785	88	0.04311	281	positive
C8	<i>Notelaea longifolia</i>	316	0.5411	171	0.1012	624	positive
C8	<i>Oplismenus aemulus</i>	316	0.2627	83	0.1177	610	positive
C8	<i>Oplismenus imbecillis</i>	316	0.5063	160	0.1351	765	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C8	<i>Pandorea pandorana</i> subsp. <i>pandorana</i>	316	0.3797	120	0.1074	601	positive
C8	<i>Parsonsia straminea</i>	316	0.5	158	0.2799	1411	positive
C8	<i>Pittosporum multiflorum</i>	316	0.3766	119	0.01988	208	positive
C8	<i>Pittosporum revolutum</i>	316	0.4209	133	0.06857	440	positive
C8	<i>Platycerium bifurcatum</i>	316	0.2848	90	0.03127	230	positive
C8	<i>Pseuderanthemum variabile</i>	316	0.519	164	0.06031	434	positive
C8	<i>Smilax australis</i>	316	0.6899	218	0.09672	651	positive
C8	<i>Stephania japonica</i> var. <i>discolor</i>	316	0.3639	115	0.1027	575	positive
C8	<i>Synoum glandulosum</i>	316	0.4335	137	0.03417	290	positive
C8	<i>Wilkiea huegeliana</i>	316	0.3639	115	0.01497	182	positive
C9	<i>Baloskion pallens</i>	164	0.3963	65	0.03132	210	positive
C9	<i>Baumea articulata</i>	164	0.3354	55	0.05141	293	positive
C9	<i>Baumea teretifolia</i>	164	0.3354	55	0.02117	153	positive
C9	<i>Callistemon pachyphyllus</i>	164	0.3476	57	0.04299	256	positive
C9	<i>Caustis reflexa</i>	164	0.3171	52	0.03284	204	positive
C9	<i>Melaleuca quinquenervia</i>	164	0.5	82	0.1821	925	positive
C9	<i>Schoenus brevifolius</i>	164	0.3476	57	0.07691	413	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C9	<i>Telmatoblechnum indicum</i>	164	0.2683	44	0.08382	432	positive
C10	<i>Acacia longifolia</i>	326	0.2822	92	0.1625	818	positive
C10	<i>Banksia oblongifolia</i>	326	0.5307	173	0.05104	401	positive
C10	<i>Callistemon pachyphyllus</i>	326	0.2669	87	0.03783	256	positive
C10	<i>Cassytha glabella</i>	326	0.5307	173	0.1016	627	positive
C10	<i>Entolasia stricta</i>	326	0.6779	221	0.2037	1131	positive
C10	<i>Epacris pulchella</i>	326	0.2853	93	0.04074	275	positive
C10	<i>Gahnia clarkei</i>	326	0.2607	85	0.186	916	positive
C10	<i>Gonocarpus micranthus</i>	326	0.2914	95	0.03246	240	positive
C10	<i>Gonocarpus tetragynus</i>	326	0.3221	105	0.04656	313	positive
C10	<i>Hakea teretifolia</i>	326	0.319	104	0.008283	141	positive
C10	<i>Leptospermum juniperinum</i>	326	0.3742	122	0.02642	240	positive
C10	<i>Leptospermum polygalifolium</i>	326	0.4571	149	0.1287	724	positive
C10	<i>Leptocarpus tenax</i>	326	0.4877	159	0.05149	389	positive
C10	<i>Lepyrodia scariosa</i>	326	0.3558	116	0.01209	170	positive
C10	<i>Melaleuca nodosa</i>	326	0.3681	120	0.1048	588	positive
C10	<i>Melaleuca sieberi</i>	326	0.6104	199	0.04321	392	positive
C10	<i>Melaleuca thymifolia</i>	326	0.5399	176	0.0206	268	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C10	<i>Panicum simile</i>	326	0.3129	102	0.05843	363	positive
C10	<i>Pimelea linifolia</i>	326	0.2761	90	0.1043	556	positive
C10	<i>Ptilothrix deusta</i>	326	0.4233	138	0.01589	209	positive
C10	<i>Schoenus brevifolius</i>	326	0.5153	168	0.05485	413	positive
C10	<i>Selaginella uliginosa</i>	326	0.2883	94	0.04813	309	positive
C10	<i>Themeda triandra</i>	326	0.408	133	0.1426	770	positive
C10	<i>Xanthorrhoea fulva</i>	326	0.2822	92	0.04791	306	positive
C11	<i>Baumea juncea</i>	104	0.2692	28	0.06995	356	positive
C11	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	104	0.6346	66	0.05907	343	positive
C11	<i>Samolus repens</i>	104	0.4038	42	0.02325	151	positive
C11	<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	104	0.2885	30	0.04244	229	positive
C11	<i>Selliera radicans</i>	104	0.2596	27	0.01386	92	positive
C12	<i>Adiantum hispidulum</i>	139	0.2734	38	0.0174	119	positive
C12	<i>Aphananthe philippinensis</i>	139	0.3741	52	0.005587	78	positive
C12	<i>Archontophoenix cunninghamiana</i>	139	0.3957	55	0.04555	267	positive
C12	<i>Asplenium australasicum</i>	139	0.259	36	0.02664	160	positive
C12	<i>Calamus muelleri</i>	139	0.3022	42	0.005157	66	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C12	<i>Cissus antarctica</i>	139	0.4604	64	0.05221	307	positive
C12	<i>Cryptocarya obovata</i>	139	0.4101	57	0.006876	89	positive
C12	<i>Diploglottis australia</i>	139	0.3309	46	0.008165	84	positive
C12	<i>Ficus coronata</i>	139	0.6259	87	0.05415	339	positive
C12	<i>Guioa semiglauca</i>	139	0.2662	37	0.06425	336	positive
C12	<i>Gynochthodes jasminoides</i>	139	0.3885	54	0.1324	670	positive
C12	<i>Lomandra hystrix</i>	139	0.3885	54	0.02192	156	positive
C12	<i>Maclura cochinchinensis</i>	139	0.3669	51	0.04899	279	positive
C12	<i>Mallotus philippensis</i>	139	0.3741	52	0.008165	90	positive
C12	<i>Neolitsea dealbata</i>	139	0.3309	46	0.01203	102	positive
C12	<i>Oplismenus aemulus</i>	139	0.295	41	0.1223	610	positive
C12	<i>Pandorea pandorana</i> subsp. <i>pandorana</i>	139	0.2662	37	0.1212	601	positive
C12	<i>Pittosporum multiflorum</i>	139	0.3525	49	0.03416	208	positive
C12	<i>Pothos longipes</i>	139	0.3022	42	0.0002149	43	positive
C12	<i>Streblus brunonianus</i>	139	0.518	72	0.01483	141	positive
C12	<i>Tabernaemontana pandacaqui</i>	139	0.3165	44	0.01633	120	positive
C12	<i>Trophis scandens</i>	139	0.2806	39	0.01977	131	positive
C12	<i>Wilkiea huegeliana</i>	139	0.2734	38	0.03094	182	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C13	<i>Acmena smithii</i>	167	0.3413	57	0.09533	498	positive
C13	<i>Acronychia imperforata</i>	167	0.2515	42	0.01665	119	positive
C13	<i>Alphitonia excelsa</i>	167	0.2515	42	0.09555	484	positive
C13	<i>Archontophoenix cunninghamiana</i>	167	0.4192	70	0.04259	267	positive
C13	<i>Commelina cyanea</i>	167	0.3174	53	0.1066	546	positive
C13	<i>Cupaniopsis anacardioides</i>	167	0.6168	103	0.06355	397	positive
C13	<i>Ficus coronata</i>	167	0.2515	42	0.0642	339	positive
C13	<i>Geitonoplesium cymosum</i>	167	0.6407	107	0.155	824	positive
C13	<i>Glochidion ferdinandii</i>	167	0.3114	52	0.1794	882	positive
C13	<i>Glochidion sumatranum</i>	167	0.2994	50	0.01859	136	positive
C13	<i>Guioa semiglauca</i>	167	0.3114	52	0.06139	336	positive
C13	<i>Gynochthodes jasminoides</i>	167	0.3713	62	0.1314	670	positive
C13	<i>Hibbertia scandens</i>	167	0.3832	64	0.1245	640	positive
C13	<i>Hypolepis muelleri</i>	167	0.3772	63	0.0802	434	positive
C13	<i>Jager pseudorhus</i>	167	0.2635	44	0.02702	169	positive
C13	<i>Livistona australis</i>	167	0.3114	52	0.07804	413	positive
C13	<i>Lomandra longifolia</i>	167	0.4251	71	0.3562	1719	constant

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C13	<i>Lophostemon suaveolens</i>	167	0.2515	42	0.06809	357	positive
C13	<i>Maclura cochinchinensis</i>	167	0.3713	62	0.04691	279	positive
C13	<i>Marsdenia rostrata</i>	167	0.3533	59	0.07912	425	positive
C13	<i>Melaleuca quinquenervia</i>	167	0.491	82	0.1822	925	positive
C13	<i>Melicope elleryana</i>	167	0.3772	63	0.01924	152	positive
C13	<i>Notelaea longifolia</i>	167	0.3413	57	0.1226	624	positive
C13	<i>Oplismenus imbecillis</i>	167	0.2575	43	0.1561	765	positive
C13	<i>Ottochloa gracillima</i>	167	0.2575	43	0.04756	263	positive
C13	<i>Parsonsia straminea</i>	167	0.503	84	0.2869	1411	positive
C13	<i>Smilax australis</i>	167	0.6826	114	0.1161	651	positive
C13	<i>Stephania japonica</i> var. <i>discolor</i>	167	0.4072	68	0.1096	575	positive
C14	<i>Baumea juncea</i>	302	0.3278	99	0.05723	356	positive
C14	<i>Casuarina glauca</i>	302	0.8642	261	0.1234	815	positive
C14	<i>Juncus kraussii</i> subsp. <i>australiensis</i>	302	0.4404	133	0.04676	343	positive
C14	<i>Melaleuca quinquenervia</i>	302	0.3179	96	0.1846	925	positive
C14	<i>Parsonsia straminea</i>	302	0.5364	162	0.2781	1411	positive
C14	<i>Phragmites australis</i>	302	0.3609	109	0.05121	339	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C15	<i>Acacia longifolia</i>	506	0.3004	152	0.1554	818	positive
C15	<i>Adiantum aethiopicum</i>	506	0.2549	129	0.05178	351	positive
C15	<i>Billardiera scandens</i>	506	0.2767	140	0.08491	504	positive
C15	<i>Breynia oblongifolia</i>	506	0.5474	277	0.1547	940	positive
C15	<i>Callistemon salignus</i>	506	0.3182	161	0.06228	428	positive
C15	<i>Casuarina glauca</i>	506	0.2668	135	0.1586	815	positive
C15	<i>Centella asiatica</i>	506	0.2885	146	0.07978	488	positive
C15	<i>Dianella caerulea</i>	506	0.7609	385	0.2372	1402	positive
C15	<i>Dichondra repens</i>	506	0.3656	185	0.1206	702	positive
C15	<i>Entolasia marginata</i>	506	0.5573	282	0.1206	799	positive
C15	<i>Entolasia stricta</i>	506	0.4743	240	0.2078	1131	positive
C15	<i>Eucalyptus robusta</i>	506	0.3478	176	0.0947	582	positive
C15	<i>Eustrephus latifolius</i>	506	0.3715	188	0.09237	584	positive
C15	<i>Gahnia clarkei</i>	506	0.581	294	0.1451	916	positive
C15	<i>Geitonoplesium cymosum</i>	506	0.3478	176	0.1512	824	positive
C15	<i>Glochidion ferdinandii</i>	506	0.5988	303	0.1351	882	positive
C15	<i>Glycine clandestina</i>	506	0.3794	192	0.1057	645	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C15	<i>Gynochthodes jasminoides</i>	506	0.3439	174	0.1157	670	positive
C15	<i>Hibbertia scandens</i>	506	0.33	167	0.1103	640	positive
C15	<i>Imperata cylindrica</i>	506	0.6028	305	0.2062	1189	positive
C15	<i>Lobelia purpurascens</i>	506	0.5336	270	0.1243	803	positive
C15	<i>Lomandra longifolia</i>	506	0.6759	342	0.3212	1719	positive
C15	<i>Melaleuca linariifolia</i>	506	0.4348	220	0.05902	473	positive
C15	<i>Microlaena stipoides</i>	506	0.4308	218	0.1376	808	positive
C15	<i>Notelaea longifolia</i>	506	0.2984	151	0.1103	624	positive
C15	<i>Oplismenus imbecillis</i>	506	0.5613	284	0.1122	765	positive
C15	<i>Parsonsia straminea</i>	506	0.6324	320	0.2545	1411	positive
C15	<i>Pittosporum revolutum</i>	506	0.253	128	0.07278	440	positive
C15	<i>Pteridium esculentum</i>	506	0.6008	304	0.2666	1447	positive
C15	<i>Stephania japonica</i> var. <i>discolor</i>	506	0.2727	138	0.1019	575	positive
C15	<i>Viola hederacea</i>	506	0.2964	150	0.08188	501	positive
C16	<i>Acacia longifolia</i>	182	0.4341	79	0.1603	818	positive
C16	<i>Banksia integrifolia</i>	182	0.6484	118	0.06636	424	positive
C16	<i>Breynia oblongifolia</i>	182	0.5989	109	0.1802	940	positive
C16	<i>Commelina cyanea</i>	182	0.2967	54	0.1067	546	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C16	<i>Cupaniopsis anacardioides</i>	182	0.4121	75	0.06983	397	positive
C16	<i>Eucalyptus botryoides</i>	182	0.2527	46	0.02949	182	positive
C16	<i>Geitonoplesium cymosum</i>	182	0.3352	61	0.1655	824	positive
C16	<i>Hibbertia scandens</i>	182	0.4725	86	0.1201	640	positive
C16	<i>Imperata cylindrica</i>	182	0.5659	103	0.2355	1189	positive
C16	<i>Leptospermum laevigatum</i>	182	0.2692	49	0.03665	218	positive
C16	<i>Lomandra longifolia</i>	182	0.7527	137	0.3431	1719	positive
C16	<i>Monotoca elliptica</i>	182	0.4011	73	0.1065	564	positive
C16	<i>Notelaea longifolia</i>	182	0.2747	50	0.1245	624	positive
C16	<i>Pittosporum undulatum</i>	182	0.3077	56	0.07092	383	positive
C16	<i>Pteridium esculentum</i>	182	0.6374	116	0.2887	1447	positive
C16	<i>Smilax australis</i>	182	0.2692	49	0.1306	651	positive
C16	<i>Stephania japonica</i> var. <i>discolor</i>	182	0.4451	81	0.1071	575	positive
C17	<i>Alphitonia excelsa</i>	327	0.4771	156	0.07344	484	positive
C17	<i>Billardiera scandens</i>	327	0.2538	83	0.09427	504	positive
C17	<i>Breynia oblongifolia</i>	327	0.4343	142	0.1787	940	positive
C17	<i>Centella asiatica</i>	327	0.3089	101	0.08665	488	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C17	<i>Corymbia intermedia</i>	327	0.2844	93	0.04948	314	positive
C17	<i>Dianella caerulea</i>	327	0.5749	188	0.2718	1402	positive
C17	<i>Dichondra repens</i>	327	0.422	138	0.1263	702	positive
C17	<i>Entolasia marginata</i>	327	0.3364	110	0.1543	799	positive
C17	<i>Entolasia stricta</i>	327	0.6758	221	0.2038	1131	positive
C17	<i>Eucalyptus tereticornis</i>	327	0.2875	94	0.06449	382	positive
C17	<i>Eustrephus latifolius</i>	327	0.3394	111	0.1059	584	positive
C17	<i>Geitonoplesium cymosum</i>	327	0.3211	105	0.161	824	positive
C17	<i>Glochidion ferdinandii</i>	327	0.4618	151	0.1637	882	positive
C17	<i>Glycine clandestina</i>	327	0.3517	115	0.1187	645	positive
C17	<i>Imperata cylindrica</i>	327	0.8165	267	0.2064	1189	positive
C17	<i>Lepidosperma laterale</i>	327	0.2875	94	0.06113	367	positive
C17	<i>Lobelia purpurascens</i>	327	0.6667	218	0.131	803	positive
C17	<i>Lomandra longifolia</i>	327	0.7003	229	0.3336	1719	positive
C17	<i>Lomandra multiflora</i> subsp. <i>multiflora</i>	327	0.2599	85	0.03784	254	positive
C17	<i>Lophostemon suaveolens</i>	327	0.422	138	0.04904	357	positive
C17	<i>Melaleuca nodosa</i>	327	0.2997	98	0.1097	588	positive
C17	<i>Microlaena stipoides</i>	327	0.367	120	0.1541	808	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C17	<i>Oplismenus aemulus</i>	327	0.2844	93	0.1158	610	positive
C17	<i>Panicum simile</i>	327	0.2905	95	0.06001	363	positive
C17	<i>Parsonsia straminea</i>	327	0.5168	169	0.2781	1411	positive
C17	<i>Themeda triandra</i>	327	0.526	172	0.1339	770	positive
C17	<i>Vernonia cinerea</i>	327	0.4281	140	0.0365	303	positive
C18	<i>Adiantum aethiopicum</i>	356	0.2669	95	0.0577	351	positive
C18	<i>Angophora floribunda</i>	356	0.2697	96	0.03786	264	positive
C18	<i>Brunoniella australis</i>	356	0.25	89	0.03448	242	positive
C18	<i>Bursaria spinosa</i>	356	0.3876	138	0.01465	203	positive
C18	<i>Cheilanthes sieberi</i> subsp. <i>sieberi</i>	356	0.368	131	0.02186	228	positive
C18	<i>Clematis glycinoides</i>	356	0.3034	108	0.03133	247	positive
C18	<i>Commelina cyanea</i>	356	0.3371	120	0.09601	546	positive
C18	<i>Desmodium varians</i>	356	0.3792	135	0.05882	396	positive
C18	<i>Dichondra repens</i>	356	0.7135	254	0.101	702	positive
C18	<i>Echinopogon ovatus</i>	356	0.3904	139	0.01848	221	positive
C18	<i>Entolasia marginata</i>	356	0.4466	159	0.1442	799	positive
C18	<i>Eucalyptus tereticornis</i>	356	0.3343	119	0.05927	382	positive

Cluster	Species	Number of samples	Frequency of occurrence	Number of occurrences	Frequency (non-group)	Total records of species	Diagnostic status
C18	<i>Glycine clandestina</i>	356	0.4298	153	0.1109	645	positive
C18	<i>Glycine tabacina</i>	356	0.3483	124	0.0178	203	positive
C18	<i>Lobelia purpurascens</i>	356	0.5056	180	0.1404	803	positive
C18	<i>Lomandra longifolia</i>	356	0.4213	150	0.3536	1719	constant
C18	<i>Microlaena stipoides</i>	356	0.8006	285	0.1179	808	positive
C18	<i>Oplismenus aemulus</i>	356	0.4326	154	0.1028	610	positive
C18	<i>Oplismenus imbecillis</i>	356	0.2725	97	0.1506	765	positive
C18	<i>Oxalis perennans</i>	356	0.2697	96	0.02028	186	positive
C18	<i>Solanum prinophyllum</i>	356	0.2584	92	0.007888	127	positive
C18	<i>Veronica plebeia</i>	356	0.2697	96	0.02299	198	positive
C19	<i>Cynodon dactylon</i>	235	0.3362	79	0.04607	289	positive
C20	<i>Avicennia marina</i> subsp. <i>australasica</i>	82	0.6098	50	0.02568	171	positive
C20	<i>Sarcocornia quinqueflora</i> subsp. <i>quinqueflora</i>	82	0.8537	70	0.03375	229	positive